

MONTHLY REPORT

1 February 1958 - 28 February 1958

RESEARCH AND DEVELOPMENT BRANCH
ENGINEERING DIVISION

RESEARCH AND DEVELOPMENT LABORATORY

1. PROJECTS AND ACTIVITIES

2001 - MECHANICAL LABORATORY PROJECTS

The following is a status report of Mechanical Laboratory assignments other than the support given to regularly assigned numbered projects:

- 2001-39 Scale Models - 485 required by SEB, complete.
- 2001-40 Tiny-Tot Dist. Rings - 45 required by R&D/EP, 75% complete.
- 2001-44 Whip Antenna for RS-16 - 7 required by R&D/EP, awaits discussion of prototype.
- 2001-47 LUF Calculators - 15 required by O&T, 10% complete.
- 2001-48 Tape Reels - 10 required by SEB, 80% complete.
- 2001-50 Mounting Bracket (Dictet Recorder) - 60 required by R&D/EP, complete.
- 2001-51 Crystal Holder Adaptors - 200 required by SEB, 50% complete.
- 2001-52 Amplifier Case, 2 required by SPD, complete.
- 2007-17 Printed Circuit Board Finishing and Connector Moulds - 60 required by SP/EA, 30% complete.

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2003-1 ANTENNA PATTERN RANGE
Project Engineer: [REDACTED]

Estimates for this facility were included in the management survey submitted to Headquarters during this period.

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2003-2 CRYSTAL VIDEO RECEIVING SYSTEM INVESTIGATION
Project Engineer: [REDACTED]

The transistor life tests are continuing. Results will be reported upon completion of the tests.

2004 - COMMERCIAL EQUIPMENT EVALUATION

25X1A9a 2004-101 RS-11 Prototype Acceptance Tests
Project Engineer: [REDACTED]

No requirement this period.

25X1A9a 2004-137 HRB Preamplifier Measurements
Project Engineer: [REDACTED]

25X1A A limited analysis of the [REDACTED] dual-channel preamplifiers was performed to cover specified tests and measurements as established in consultation with members of ESO and SFD.

These units are VHF amplifiers powered from a 28 volt DC source and covering the frequency range 50 - 100 mc in one band. Channel output is in the form of a detected video signal. The results of these limited tests indicate that the tangential sensitivity and voltage gain of the units are satisfactory; however, the bandwidth tests reveal poor low frequency response. The regulating power transistors operated within their rated temperature. Current commitments are complete and the project will be closed out.

25X1A9a 2007-1 RADIATION DETECTION EQUIPMENT MAINTENANCE
Project Engineer: [REDACTED]

All Radiological Survey Instruments on hand have been placed in an operating condition and calibrated. The monthly statement as to condition has been forwarded to the Medical Staff.

25X1A9a 2007-12 RS-6 RECTIFIER REPLACEMENT
Project Engineer: [REDACTED]

Laboratory commitments to this project are complete; however, the project will be held open pending results of an evaluation by OC-O&T.

25X1A9a 2007-13 TINY TOT KEYBOARD RELAY MOUNTING BOX
Project Engineers: [REDACTED]

Mechanical work is complete. Completion of this project is pending receipt of a shipment of relays. No activity during this period.

25X1A9a 2007-14 LOW NOISE TRANSISTORS
Project Engineer: [REDACTED]

Inactive due to higher priority work.

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2508 - ETCHED ANTENNA INVESTIGATION

Project Engineer: None assigned

Awaits completion of priority work.

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2510 - AUDIO OSCILLATOR, IN-1X

Project Engineer: [REDACTED]

The revised prototype is being assembled.

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2512-3 HIGH FREQUENCY CONVERTER, CV-2

Project Engineer: [REDACTED]

The development of a CV-2 type converter to cover the frequency range from 3 to 12 mcs in a single unit has been completed. The unit has been designated the CV-2A and submitted for fabrication. (See Project 2512-5) The objectives of this project have been accomplished; thus, it will be closed out and dropped from future reports.

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2512-5 FABRICATION OF CV-2A

Project Engineer: [REDACTED]

Five CV-2A's have been fabricated and tested. One unit has been delivered, three are on hand, and the fifth unit awaits replacement of a defective capacitor.

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2514-2 MINIATURE TRANSMITTER (SIMILAR TO TA-1)

Project Engineer: [REDACTED]

This project has been terminated due to parallel project requirements specified under project 2007-18.

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2514-3 TA-1 FABRICATION

Project Engineer: [REDACTED]

Inactive during this period.

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2515 - TRANSMITTER ADAPTOR MODIFICATION (A-3)

Project Engineer: [REDACTED]

CW operation of the TA-1 Adaptor with the A-3 modulator attached, but switched to the CW mode, has revealed a reduction in RF output of approximately 1/2 watt. The reduced output is compared to the CW output obtained without the A-3 modulator attached and is now being studied. The instruction book is in the final stages of reproduction.

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TESTS COMPLETE - REPORT IN PROCESS

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2005-104
2005-109
2005-111
2007-12



PROJECTS IN PROCESS

2004-133	Tiny Tot Radiation Tests
2004-136	Hallamore Multicoupler
2037-4	RS-16A
2099-107	RS-13B Prototype Evaluation

PROJECTS SUSPENDED

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2004-135	Project [REDACTED] A&A No requirement.
2007-9	Antenna Study Suspended temporarily because of higher priorities.
2007-11	DZ Beacon Support No requirement.
2515	TA-1 With Modulator Temporarily suspended because of higher priorities.

PROJECTS UNASSIGNED

2004-118	R-744/PRD Radio Receiver Awaiting receipt of equipment.
2004-138	RT-4A Evaluation Awaiting receipt of equipment.

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Chief, Research & Development Laboratory
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DOCUMENT SEPARATOR SHEET

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- 2127 SEARCH RECEIVING SYSTEM, CS-8 - [REDACTED] 25X1A9a
- Work has begun on all phases of the CS-8 development. The RF amplifier has been fully tested in breadboard form, and tests are under way on the logic control and IF circuit breadboard. The IF filters and fixed oscillator development is being done on a sub-contract basis.
- 2129 MINIATURE VIDEO AMPLIFIER, VA-5 - [REDACTED] 25X1A9a
- Ninety-five per cent of the material required for the VA-5 has been received by the contractor and mechanical fabrication is getting underway. The contractor hopes to begin shipping VA-5's as well as CW-1 adaptors by the middle of April. Fifty per cent of the CW adaptor materials have been received. All items are being procured under this contract are to be delivered by the end of May.
- 2130 CRYSTAL VIDEO RECEIVER, PRR-8 - [REDACTED] 25X1A9a
- This is a Signal Corps project for the development of a portable, transistorized crystal video system covering the range of 1 to 10.75 kmc. Agency funds were committed for procurement of one unit for our evaluation. The contractor has just started delivery of these units to the Signal Corps and our unit should be available in the near future.
- 2131 MINIATURE DATA RECORDER, CB-3 - [REDACTED] 25X1A9a
- The two contractors engaged in the parallel development of this equipment are now working to a schedule which outlines in graph form the approximate dates for completion of the remaining phases. Progress has been satisfactory; both companies are entering into the final hardware design and fabrication stage.
- 2132 SPECIAL RECEIVING EQUIPMENT, WR-1 - [REDACTED] 25X1A9a
- The study phase is almost complete and initial circuit design is underway. Mechanical design is progressing and considerable printed circuit layout work is being done.
- 2133 HIGH-SPEED FIELD STATION, AS-5 - [REDACTED] 25X1A9a
- A proposal has been requested from the contractor to modify the AS-5 system to receive transmissions from the RS-16A field set and to incorporate an error correction capability into the AS-5. Progress on this project is satisfactory.

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FREE POWER SOURCES - [REDACTED]

Tests have recently been conducted with solar cells which indicate that about an inch of new snow has little effect on the output of the cells. Greater depths of snow, i.e., more than 3 inches, render the cells almost useless.

25X1A9a 2627

VARIABLE SPEED TAPE RECORDER AND ACCESSORIES - [REDACTED]

An informal report was submitted at the end of this reporting period outlining our requirements and the various equipments that are currently available to meet them. The recorder/reproducer recommended in this report was the Ampex FR-1100.

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[REDACTED] INVESTIGATION & MODIFICATIONS -

No significant progress was made during this period.

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AUTOMATIC DIGITAL TRANSMISSION SYSTEM, AS-8 - [REDACTED]

The engineering tests originally scheduled for April 1958 will be conducted in June between the field station at Washington, D.C., to the base station [REDACTED]

(See Memo to the Files, "Trip Report [REDACTED] dated 28 February.)

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25X1A9a 2639

VHF COLLECTION RECEIVER - [REDACTED]

Specifications for the CR-2 Collection Receiver are now being written. This project will be conducted on an Expedited basis.

25X1A9a 2640

SIGNAL DELAY DEVICE - [REDACTED]

A project status report has been forwarded to the Supplemental Programs Division relating the findings of a review of techniques and available equipment. It was concluded that the operational characteristics of available models will require the use of tape loops in this application. Some special development will be required to provide tape loop transports having a size, configuration, and power demand compatible with the companion storage recorders.

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PHOTOGRAPHIC DATA RECORDING TECHNIQUES - [REDACTED]

Internal study of optical recording techniques and their possible application to ELINT data collection continued during this period. The purpose of this effort is to develop

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[REDACTED] - [REDACTED] Task Order 12

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Work Orders Outstanding
 W.O. 2 Fabricate battery chargers \$3659.00
 W.O. 3 Fabricate thermo-couple shunts 265.67
 Dollar balance remaining 19850.33

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[REDACTED] - [REDACTED] Task Order 2

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Work Orders Outstanding
 W.O. A Fabrication of a Crystal Video Demand System \$10723.14
 Dollar balance remaining 24276.86

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[REDACTED] - [REDACTED], Task Orders 1 and 3

25X1A

Work Orders Outstanding, Task 1
 W.O. 4 Video Recorder design and fabrication \$55581.51
 W.O. 5 Interference generators 7942.08
 Work Orders Outstanding, Task 3
 W.O. 1 Fabrication of Parabolic dish antenna \$6142.12
 W.O. 2 Discone Antenna Modification 5589.96
 Dollar balance remaining, Task 3 \$23267.92

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[REDACTED]

Chief, External Projects Section/R&D

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